

# EDUCATIONAL OUTREACH

## PUBLIC AFFAIRS AND EDUCATIONAL OUTREACH



Recruiting for the 2003 cadre of TLRBSE participants was completed in early December. We received nearly 140 applications, due to vigorous recruitment efforts at meetings, positive word of mouth, and especially, via Internet postings and list-serves. The selection process was a challenge, as many of the applicants were outstanding, with extensive experience in teaching astronomy, physics, general science, computers, and use of the Internet. Many applicants also had experience in using image processing software in an educational context.

Our final group of 20 teachers is geographically diverse, hailing from Alaska to California to New Hampshire. In all, the teachers come from thirteen states and Puerto Rico. Their schools are

likewise diverse, including urban and rural, public and private, and culturally mixed schools. Two of our schools serve primarily Native American and Hispanic student populations. The group includes 10 women and 10 men. Seventeen of the educators teach at the high school level, with three others at the middle school level.

The teachers are participating in a graduate-level Distance Learning course, for college credit, that runs from late January to early May. The course will prepare them for the two-week summer workshop in Tucson, which includes a week of observing on Kitt Peak. The teachers will be studying novae, active galactic nuclei, and solar phenomena, as well as learning astronomical imaging and spectroscopy skills. After completing the course and workshop, the teachers will return to their schools prepared to conduct astronomy research in their classrooms, and to mentor three other early-career science teachers through the sometimes difficult early teaching years.



**Project ASTRO-Tucson** is the foundation of NOAO's successful regional outreach program. The project's core element is the partnering of professional and amateur astronomers with K-12 teachers and other community educators who want to enrich their astronomy and science

teaching. In an effort to extend the partnerships, a follow-up workshop for Project ASTRO-Tucson partners was held at David Levy's home-based observatory in Vail, AZ, on February 8. Led by Connie Walker and Robbie Jones, workshop highlights included sunspot observing, tracking where the Sun sets on the horizon, and observations using a wide variety of telescopes. David also spoke to the group on "Starry Nights: Getting Kids to Love the Sky." Many Tucson Amateur Astronomy Association members and Project ASTRO-Tucson astronomer partners volunteered their time and telescopes for this successful workshop, and we are grateful for their enthusiasm and participation.

**Family ASTRO-Tucson** is reaching a variety of underserved groups in the Tucson area including the Tohono O'odham Indian Nation, the Hispanic community of the Sunnyside School District, and the Girl Scouts of America. Families involved with these three groups are invited to evening or weekend events where they can have fun doing astronomy activities together. The program helps parents and caregivers get more involved in their children's science education, and it offers a way for them to spend more time together in active experimentation, observation, and discussion. At the events, families work and play at activity stations as well as participate in a number of facilitated activities. At the end of the

event, the families receive a kit to take home. The evening events are facilitated by event leaders trained last fall by Connie Walker and Robert Wilson of NOAO. Evenings involving one of the three thematic family kits—"Night Sky Adventures," "Moon Mission," or "Race to the Planets"—took place on January 23 and February 7, 11, 13, and 28. Two more are scheduled for March 12 and 19. Sponsored by the National Science Foundation and developed by the Astronomical Society of the Pacific, Family ASTRO is off to a vigorous start in the Tucson area.

### ASTRO-Chile

Even with participants half a world apart and speaking two languages, the most effective ways to teach concepts in astronomy is a lively topic for discussion. The second in a series of ASTRO-Chile videoconference workshops for teachers in Tucson and La Serena took place on February 12. The teachers exchanged methods and ideas about how to explain and demonstrate concepts of spectroscopy. The entire workshop was held in Spanish, facilitated by four bilingual science teachers from the Tucson Unified School District, representing the elementary, middle school, and high school grades. Teachers Julie Frieberg, Thea Cañizo, Aida Castillo Flores, and Glenn Furnier worked with NOAO's Connie Walker, Dara Norman, and Steve Pompea to make the event a productive interchange. These first two workshops are envisioned as the beginning of a larger collaboration meant to take maximum advantage of proven educational outreach programs in the United States, such as Project ASTRO, and very successful educational efforts in Chile. Merging the strategies and techniques from each group has led to an exciting cross-cultural dialogue on astronomy education in the schools and public outreach to the community.